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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,450	04/20/2006	Nobuhiko Tsuda	Q94064	3460

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EXAMINER	
BUIE-HATCHER, NICOLE M	
ART UNIT	PAPER NUMBER
1767	

NOTIFICATION DATE	DELIVERY MODE
07/21/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/576,450	TSUDA ET AL.	
	Examiner	Art Unit	
	NICOLE M. BUIE-HATCHER	1767	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4 and 7-12* is/are pending in the application.

4a) Of the above claim(s) *9-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,7 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/01/2011 has been entered.

Response to Amendment

The amendment filed on 06/01/2011 has been entered. **Claims 1, 4, and 7-12** remain pending. Claims 9-12 were previously withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

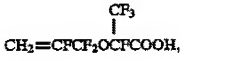
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

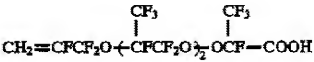
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araki et al. (US 5,670,593).

Regarding claims 1 and 4, Araki et al. discloses a tetrafluoroethylene polymer aqueous dispersion containing 0.01-80 mol% of a functional fluorine-containing olefin (C6/L8-54) for example the formulas as shown below as well as their derivatives (C25/L26-C26/L49):





Araki et al. disclose in claim 1 the tetrafluoroethylene polymer aqueous dispersion wherein the tetrafluoroethylene polymer has a tetrafluoroethylene unit content of 20-99.99 mol%. Additionally, it is possible to use **no usual free emulsifying agent** or decrease an amount thereof

(C21/L57-63). Araki et al. discloses the use of the olefin in emulsion polymerization contributes to making the emulsion particle size fine, increasing a yield and reaction rate, and also making it possible to achieve a soap-free polymerization (C21/L53-56).

However, Araki et al. does not disclose the amount of tetrafluoroethylene exceeds 60 mole percent. For Examples 33-35 which the polymerization conditions are shown in Table 7, a hydroxyl version of the reactive emulsifier is used wherein the tetrafluoropolymer contains 99.2 mole% of tetrafluoroethylene in Example 33, 99.1 mole% tetrafluoroethylene in Example 34, and 98.5 mole% of tetrafluoroethylene in Example 35. Therefore, it would have been obvious to one of ordinary skill in the art would expect if the N-1-OH surfactant used in these examples was substituted with any of the N-1-COOH, N-2-COOH, or N-1-$COONH_4$ (C58/L62-C59/L10) which are the same emulsifiers as shown above would have a reasonable expectation of success in the polymerization process of higher amounts of tetrafluoroethylene. It would have been obvious to one of ordinary skill in the art to substitute the suspension polymerization process of Examples 33-35 with an emulsion polymerization process in order to make the emulsion particle size fine, increasing a yield and reaction rate and also making it possible to achieve a soap-free polymerization. Therefore an aqueous dispersion of the fluoropolymer is produced.

However, Araki et al. does not disclose the tetrafluoroethylene polymer is prepared by emulsion polymerization. Regarding the method limitations recited in claim(s), the examiner notes that even though a product-by-process is defined by the process steps by which the product is made, determination of patentability is based on the product itself. *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). As the court stated *in Thorpe*, 777 F.2d at 697, 227 USPQ at 966 (The patentability of a product does not depend on its method of production. *In re*

Pilkington, 411 F. 2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969). If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process). See MPEP § 2113.

Regarding claim 7, Araki et al. does not disclose the tetrafluoroethylene polymer aqueous dispersion which has a solid matter concentration of 5 to 70% by mass. Additionally, Hirashima et al. teaches the solid matter concentration of the water-based emulsion is from 10 to 70 wt% (C8/L55-62). It would have been obvious to one of ordinary skill in the art at the time of invention to obtain a solid matter concentration as taught by Hirashima et al. in a composition of Araki et al. , and the motivation to do so would have been as Hirashima et al. suggests to improving storage stability and viscosity (C8/L55-62).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Araki et al. (US 5,670,593) in view of Hirashima et al. (US 5,856,392) as applied to claim 1 above, in further view of Araki et al. (WO 95-08598A, see English equivalent (US 5,925,705) for citation).

Regarding claim 8, Araki et al. (US '593) discloses a tetrafluoropropylene polymer aqueous dispersion as shown above in claim 1.

However, Araki et al. (US '593) does not disclose the tetrafluoroethylene polymer aqueous dispersion wherein the particle comprising the tetrafluoroethylene polymer has an average primary particle diameter of 50 to 500 nm. Araki et al. (US '705) teaches the particle size is not more than 200 nm (C3/L14-22). Araki et al. (US '593) and Araki et al. (US '705) are analogous art concerned with the same field of endeavor, namely aqueous dispersions of fluoropolymers produced from emulsion polymerization. It would have been obvious to one of

ordinary skill in the art at the time of invention to use the particle size of Araki et al. (US '705) in the dispersion of Araki et al. (US '593), and the motivation to do so would have been to improve the stability of the dispersion (C3/L14-22).

Response to Arguments

Applicant's arguments filed 06/01/2011 have been fully considered but they are not persuasive. The following comment(s) apply:

A) Applicant's argument that it is not obvious to use the claimed fluorovinyl group-containing compound (V) for producing a polymer having a TFE unit content exceeding 60 mole percent since the compound (V) was known as an impurity (page 6) is not persuasive. Applicant's allegation is not supported by any objective evidence. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). See MPEP § 716.01 (c). Furthermore, Araki (US '359) teaches a copolymer of the claimed compounds wherein the amount of (B) is up to 99.99 mole % which includes tetrafluoroethylene (C6/L9-54). Also, Araki (US '359) teaches the prior art had issues with the reactivity of polymerization with tetrafluoroethylene (C22/L48-67). However, Araki (US '359) teaches the object of the invention was to solve those types of problems (C23/L19-25).

B) Applicant's argument that N-1-OH is not an emulsifier (page 6) is not persuasive. As shown above, Araki (US '359) teaches any of the functional fluorine-containing olefins may be used.

C) Applicant's argument that the polymerization of TFE, PPVE and N-1-OH is a suspension polymerization (page 7) is not persuasive. In respect to claim 1, Araki et al. (US '359) contemplates that the emulsion polymerization would reduce the particle size.

D) Applicant's argument that it is impossible to obtain a dispersion by suspension polymerization (page 7) is not persuasive. Aqueous suspension polymerization produces a suspension of the polymer, wherein a suspension is a dispersion before the separation of the water.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE-HATCHER whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PETER F GODENSCHWAGER/
Examiner, Art Unit 1767

/N. M. B./
Examiner, Art Unit 1767
7/12/2011